◇ **Signaling off** → press [Select] key to turn off the CTCSS/DCS code → "Set Ok" pops up on the screen and returns to the previous level;

◇ **CTCSS** → press [Select] key → rotate [ENC] knob to choose the CTCSS code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;

◇ **DCS** → press [Select] key → rotate [ENC] knob to choose the DCS code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;

◇ **DCS Reverse** → press [Select] key → rotate [ENC] knob to choose the DCS Reverse code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;

②. **TXSubaudio** → Press [Select] key to make the following options and procedures:

◇ **Signaling off** → press [Select] key to turn off the CTCSS/DCS code → "Set is ok" pops up on the screen and returns to the previous level;

◇ **CTCSS** → press [Select] key → rotate [ENC] knob to choose the CTCSS code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;

◇ **DCS** → press [Select] key → rotate [ENC] knob to choose the DCS code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;

◇ **DCS Reverse** → press [Select] key → rotate [ENC] knob to choose the DCS Reverse code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;

CTCSS Phase Reverse (CTCSSTail)

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Parameters**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **CTCSSTail** and press [Select] key to enter.

3. Choose operation of **55HZ, 120, 180, 240** and press [Select] key to confirm.

4. "Set Ok" pops up on the screen and returns to the previous level;

Tone Set

If it is allowed by CPS software, set and check the prompt tones by accessing the **Tone Set** menu.

Profiles

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **Profiles** and press [Select] key to enter.

3. Rotate [ENC] knob to choose **General** or **Silent**, and press [Select] key to confirm the selection.

4. "Profile is set" pops up on the screen and returns to the previous level.

Key Tone

Processes:

43

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **KeyTone** and press [Select] key to make following options and procedures:

①. **KeyRingSW** ➞ press [Select] key to turn it on / off;

②. **KeyRingStat** ➞ press [Select] key ➞ rotate [ENC] knob to choose the keytone level ➞ press [Ok key to confirm ➞ "Keytone is set" pops up on the screen and returns to the previous level.

📖 Message Tone (Msg Tone) 🔊

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **Msg tone** and press [Select] key to enter.

3. Rotate [ENC] knob to choose the desired ringtone type or turn it off and press [Select] key to confirm.

4. "RingTone is set" pops up on the screen and returns to the previous level.

📖 Private Call Tone (PCallTone) 🔊

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **PCallTone** and press [Select] key to make following options and procedures:

①. **PCallSW** ➞ press [Select] key ➞ rotate [ENC] knob to

choose operation of **Rx Begin Tone, Rx End Tone, Tx Begin Tone, Tx End Tone** ➞ press [Select] key to tick or cancel it ➞ press [Back] key to return to the previous level;

②. **PCallTone** ➞ press [Select] key ➞ rotate [ENC] knob to choose the desired ringtone type or turn it Off ➞ press [Select] key to confirm ➞ "Tone is set" pops up on the screen and returns to the previous level.

📖 Group Call Tone(GCallTone) 🔊

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **GCallTone** and press [Select] key to make following options and procedures:

①. **GCallSW** ➞ press [Select] key * rotate [ENC] knob to choose operation of **Rx Begin Tone, Rx End Tone, Tx Begin Tone, Tx End Tone** ➞ press [Select] key to tick or cancel it ➞ press [Back] key to return to the previous level;

②. **GCallTone** ➞ press [Select] key ➞ rotate [ENC] knob to choose the desired ringtone type or turn it Off ➞ press [Select] key to confirm ➞ "Tone is set" pops up on the screen and returns to the previous level.

📖 Alert Tone 🔊

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **Call Alert** tone and press [Select] key to enter.

3. Rotate [ENC] knob to select the desired ringtone type or turn it off and press [Select] key to confirm.

4. "Tone is set" pops up on the screen and returns to the previous level.

📖 Power On Tone

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **Poweron tone SW** and press [Select] key turn it on or off.

3. Press [Back] key to return to the previous level.

▮ Appendix

If it is allowed by CPS software, set and check GPS, FM radio, time, DTMF, HeadSet+Speaker etc. by accessing the **Appendix** menu.

📖 GPS

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix** , and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **GPS** and press [Select] key to make following options and procedures:

①. **GPS switch** ➔ press [Select] key to turn GPS On or Off;

②. **Upload SW** ➔ press [Select] key ➔ rotate [ENC] knob to choose operation of **GPGGA, GPGSA, GPGSV, GPRMC** ➔ press [Select] key to tick or cancel ➔ press [Back] key to return to the previous level;

③. **Group Info** ➔ press [Select] key to enter the following options and procedures:

◇ **GPS map** ➔ press [Select] key to display the rough distance between the radio and other members ➔ rotate [ENC] knob to choose the calculation unit ➔ press [Back] key to return to the previous level;

◇ **GPS RXMsgs** ➔ press [Select] key to display the received message list from others ➔ rotate [ENC] knob to check the location information of others ➔ press [Back] key to exit ➔ press [Back] key to return to the previous level;

◇ **GPS location** ➔ press [Select] key to display the location information of the radio ➔ rotate [ENC] knob to check GPS / GL received satellites information and signal strength (white: empty signal, red: weak signal, light blue: available signal) ➔ Press [Select] key to return to the previous level;

◇ **Clear RXMsg** ➔ press [Select] key to delete the received messages and return to the previous level;

④. **GPS Report Chn** ➔ press [Select] key to check Zone, Chn, Send interval on / off information ➔ press [Back] key to return to the previous level;

⑤. **Calibrator** ➔ press [Select] key to make following options and processes:

◇ **Auto** ➔ press [Select] key to confirm;

◇ **Manual** ➜ Press [Select] key ➜ Display Time zone and difference list ➜ rotate [ENC] knob to choose the desired time zone ➜ Press [Select] key to confirm ➜ return to the previous level;

📝 **Note:**

◇ GPS is allowed by software;

◇ Some GPS functions must be pre-set by software before use;

◇ Some GPS functions must be positioned successfully before use normally;

◇ Some GPS functions require other users to have GPS function and successfully positioned also before use normally;

◇ The GPS Distance Calculation or the use of some functions is for reference only, which may cause errors due to some unexpected or environmental reasons;

◇ GPS function is optional.

📖 FM Radio

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **FM radio** and press [Select] key to display the FM radio frequency information.

3. Rotate [ENC] knob to manually select the FM radio frequency or seek the FM radio frequency automatically.

4. Press the [Back] key to exit the FM radio mode and return to the previous level. Or press [OK] key to make the following options and procedures:

①. **Save** ➜ press [Select] key to save the current FM radio channel;

②. **FM List** ➜ press [Select] key to display the list of saved FM radio frequencies ➜ rotate [ENC] knob to choose the desired frequency ➜ press [Select] key to make below operations:

◇ **Delete** ➜ press [Select] key to delete the current FM radio frequency or press [Back] key to cancel.

◇ **Play** ➜ press [Select] key to play the current FM radio frequency or press [Back] key to cancel.

📖 Time

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **Time** and press [Select] key to make following options and procedures:

①. **Date** ➜ Press [Select] key to display the date and year ➜ rotate [ENC] knob or input the desired date and year via numeric keypad of speaker microphone ➜ press [Ok] key to confirm ➜ "Date is set" pops up on the screen and returns to the previous level;

②. **Time** ➜ Press [Select] key to display the time ➜ rotate [ENC] knob to choose or input the desired time via numeric keypad of speaker microphone ➜ press [Ok] key to confirm ➜ "Time is set" pops up on the screen and returns to the

previous level;

③. **DateForm** ➔ press [Select] key ➔ rotate [ENC] knob to choose the desired date form ➔ press [Select] key to confirm ➔ "Date is set" pops up on the screen and returns to the previous level;

④. **Use GPS Datetime** ➔ press [Select] key to turn it on or off;

📝 **Note:**

◇ **Use GPS Datetime** is effective only when GPS function is on and successfully positioned.

📖 **DTMF** 🔘

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **DTMF** and press [Select] key to make following options and procedures:

①. **DTMF Switch** ➔ press [Select] key to turn it on or off;

②. **DTMF LocVolume** ➔ press [Select] key to display current local volume ➔ rotate [ENC] knob to adjust the volume ➔ press [OK] key to confirm ➔ "Save Ok" pops up screen and returns to the previous level;

📝 **Note:**

◇ DTMF code Tone is only used as a alert tone to the local radio and remind the recipient user to receive the call;

◇ DTMF code must be preset by CPS software.

📖 **HeadMIC+Spk**

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **HandMic+Spk** and press [Select] key to enter.

3. Rotate [ENC] knob to choose operation of **Spk+HandMic, LoudSpeaker, Handmic** and press [Select] key to confirm.

4. "Set Ok" pops up on the screen and returns to the previous level

📝 **Note:**

1. HandMic+Spk is the choice of audio output mode of this radio.

◇ If it is Off, neither the external speaker nor the handMic (speaker microphone) has audio output. It requires inserting earpiece to hear the output audio.

◇ If "HandMic" mode is selected, there is audio output from the speaker microphone, but no audio output from the external speaker.

◇ If "LoudSpeaker" mode is selected, there is audio output from the external speaker, but no audio output from the speaker microphone.

◇ If "Spk+HeadMic" mode is selected, both the external speaker and the speaker microphone have audio output.

2. The headset audio output at the side accessory socket is not controlled by menu setting; it always has audio output once inserting the headset.

▤ Record

If it is allowed by CPS software, set and check record set, recording list, clear record, space info about recording by accessing Record menu.

Processes:

1. Press the preset [Record On/Off] key to turn it on / off.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Record**, and then press [Select] key to enter.

2. Rotate [ENC] knob to make following options and processes:

①. **Record Set** → press [Select] key → rotate [ENC] knob to choose operation of RX record SW, TX record SW → press [Select] key to turn it on or off → press [Back] key to return to the previous level;

②. **Record List** → press [Select] key to display the recording list → rotate [ENC] knob to choose the desired record and press [Select] key to make following options and processes:

◇ **Play** → press [Select] to play the selected recording → return to the previous level after finishing playing;

◇ **Delete** → press [Select] key → "Are you sure?" pops up on the screen → press [Ok] key to confirm deletion or press [Back] key to cancel deletion and return to the previous level;

◇ **Information** → press [Select] key to display the detailed information of the recording.

③. **Clear record** → press [Select] key → "Are you sure?" pops up on the screen → press [Ok] key to confirm deletion or press [Back] key to cancel deletion and return to the previous level;

④. **Space Info** → press [Select] key to display the recorded time and total recordable time information → press [Back] key to return to the previous level

📝 Notes

◇ The total recording time supported is more than 50 hours. It is supported to purchase additional recording time according to the actual requirement.

▤ Device Info

If it is allowed by CPS software, set and check Radio ID, Rx Group List, CH Contact (channel contact), Version and other information by accessing **Device Info** menu.

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose Record, and then press [Select] key to enter.

2. Rotate [ENC] knob to make following options and processes:

①. **Radio ID** → press [Select] key to display the Radio ID → rotate [ENC] key to choose or input desired ID with numeric keypad of speaker microphone → press [OK] key to save → "Set ok" pops up on the screen and returns to the previous level.

②. **RXGroupList** → press [Select] key to display the receiving group list → rotate [ENC] knob to check details → press [back] key to return to the previous level;

③. **CH contact** → press [Select] key to display the default channel contact information → press [Back] key to return to

the previous level;

④. **Version** ➔ press [Select] key to display the local version information ➔ press [Back] key to return to the previous level;

▉ User_defined Mode

If it is allowed by CPS software, it is supported to check and modify the parameters of Channel or VFO mode by accessing User_defined Mode menu.

Processes:

1. In standby mode, press and hold the [B/E] key for 3 seconds to enter the User-defined mode.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Record**, and then press [Select] key to enter.

2. Rotate [ENC] knob to select the following options (refer to **User_defined table**).

3. Press [Select] key to light up the cursor and enter to the editing mode.

4. Rotate [ENC] knob to choose the desired value and press [Select] to confirm and save.

5. Press [Back] key to return to the previous level.

User-defined table

In order	Operation	Options	Confirm	Remarks
Channel Attribution (Working Mode)	Press [Select] key	Digital/Analog/RX:D/A-TX:A/TX:D/A-RX:D	Press [Select] key	For both Analog and Digital mode
RX Frequency		In the available range of the radio		
TX Frequency		In the available range of the radio		
Power		High/Low		
RX BS (Slot)		Off / Slot 1/Slot 2		For Digital Mode
TX BS (Slot)		Off / Slot 1/Slot 2		
RX Color Code		0~15		
TX Color Code		0~15		
Alarm		On/Off		Not available for digital VFO mode
Call Alert		On/Off		
Private Call Type		PATCS /OACSU		
Meg Type		PATCS /OACSU		For Digital Mode
Permission (TX Policy)		Impolite/ Polite to CC/ Polite to All		
RX Group List		Off / Self-defined		
Encryption		Off / Defined by software		
Default Contacts		Off / Contact List		
Emergency		Off / self-defined		Not available for digital VFO mode
Scan List		Off / self-defined		
Bandwidth		Narrow/Wide		For Analog Mode only
TX Subtone Type		Signaling Off/CTCSS/DCS/ DCS Reverse		
TX Subtone(TX Sub Item)		The signal codes of DCS/CTCSS		
RX Subtone Type		Signaling Off/CTCSS/DCS/ DCS Reverse		
RX Subtone(TX Sub Item)		The signal codes of DCS/CTCSS		
Scan List				Not available for analog VFO mode
Save2SelChn (Save to current channel)		All available channels		
Save2SelChn (Save to selected channel)		All available channels		

📝 **Notes**

◇ When accessing any sub menu, press the [Back] key to return to the previous level.

Function Applications

📖 Modes of TX and RX in scanning

Set TX and RX call modes in scan list by CPS software.

📖 Scan TX Mode

In scanning, when there is detected active channel or talk group, the radio will stay at the channel for a period of time, which is called "idle time".

◎ The scan TX modes of the scan list can be set as below:

● **Talkback**

①. If it is "On", when a carrier signal of any channel in the scan list is received in scanning, press the [PTT] key to transmit to the channel within 3S after the received signal disappears.

②. If it is "OFF", the reply is based on the "Scan TX Mode" preset by the programming software.

📝 Notes:

Scan TX Mode:

◇ **Current Channel** — reply on the channel that starts the scanning.

◇ **Last Operated Channel** — reply on the channel where the radio stays at last time.

◇ **Appointed Channel** — specify the only channel to reply.

Appointed Channel:

After selecting the channel for replying, if there is carrier signal of any channel in the scan list received in scanning, after the received signal disappears, press the [PTT] key, it will reply on the preset appointed channel.

Maintenance and Clean

To ensure the best performance and prolong working life, please acquaint yourself with the following for maintenance and cleaning.

Maintenance

◎ Please do not scratch or puncture the device with hard or sharp object.

◎ Please do not place the device in an environment which can corrode electronic circuits or under direct solar radiation.

◎ Please do not carry the device by its antenna or headset.

◎ Please make sure the SP-MIC plug is covered when not in use.

Clean

◎ Please clean your device regularly by using a dry clean cloth or soft brush to wipe the dust on the surface and on the charger contacts;

◎ The keypads, control knob and housing of the device may be dirty from use. Please use nonwoven wipes to clean them. Do not use chemicals to clean it such as detergent, alcohol, spray or petroleum products, on the device surface or printed labels. Chemicals can damage the housing, display and remove the printing on the labels. Before power on the radio, please make sure the device is dry completely.

General guide for fault handling

Malfunction	Analysis of causes	Handling method
Fail to turn ON radio, when connected to 13.8V DC power and press power key[⏻]. There is no display on screen.	1.Power cable is installed incorrectly. 2.One or more power fuse wire was/were blew out.	1.Make sure the power cable is installed correctly. (Red wire links to positive pole "+" black wire links to negative pole"-") 2. Check the reason why fuse blew out. And then replace the fuse with same rated value.
Fail to change frequency via encoder knob or [Up] and [Down]key on microphone.	No data was found in the memory channels.	Save some data in the memory channels.
Fail to transmit even when pressing PTT key.	1. Microphone jack did not be well connected to the radio. 2. You may set the TX frequency under suitable offset value.	1. Turn off radio, and then push the microphone jack in to radio until a lock sound heard. 2. Turn off the offset function.
Fail to talk with members in the same group.	The current working channel frequency or signaling setting is different with the other members in the group.	Change channel or reset signaling and frequency to be same as the other members in the group.
	The setting of Digital or analogue channel is incorrect.	Reprogram the current digital or analogue channel.
	Far away with that group members.	Get closer to the group members.
There is an irrelevant voice or noise on the current channel.	1. To be interfered by other users on same frequency. 2. Did not program with relevant signaling.	1. To change frequency or channel. 2. To program signaling for all group members to prevent same frequency interference.

Malfunction	Analysis of causes	Handling method
There is loud noise when talking.	1. The communication distance is too far between the other members. 2. To be blocked by high building, or be on lower landform or basement etc working environment. 3. To be interfered strongly by external environment or others.	1.Get closer to other members 2.Go for open air area, and turn on radio again for a try. 3.Try to keep away with instruments or equipments which may cause interference.
GPS fail to positioning	Radio without GPS feature; Or is working under poor working environment that fails to receive GPS signal.	To add GPS features or move to work in the open air.

✎ **Note:**

If the above methods fail to solve your problem, or you confront different malfunctions, please contact your local dealer or appointed maintenance station.

Standard accessories

Radio Unit

Speaker Microphone

GPS Antenna

DC power cord

Mounting Bracket

Screws

FCC compliance statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference including received interference that may cause undesired operation.

The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.

— Increase the separation between the equipment and receiver.

— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

— Consult the dealer or an experienced radio/TV technician for help.

This equipment shall be installed and operated with minimum distance 169cm between the radiator & body.

CE Warning Statement

We declare that the radio is compliance with Radio equipment Directive (RED) 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: xxxxxx

Use the Mobile Radio in the environment with the temperature between 0℃ and 50℃.

CE RF Exposure and Separation Distance:
For safe operation, the minimum separation distance to the antenna should be 165.0 cm.

CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

T/Rx: 136-174/400-480Mhz
GPS 1575.42±1.023 Mhz
RF Power: 20/5W

Radioddity

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